The edge

CoastNet

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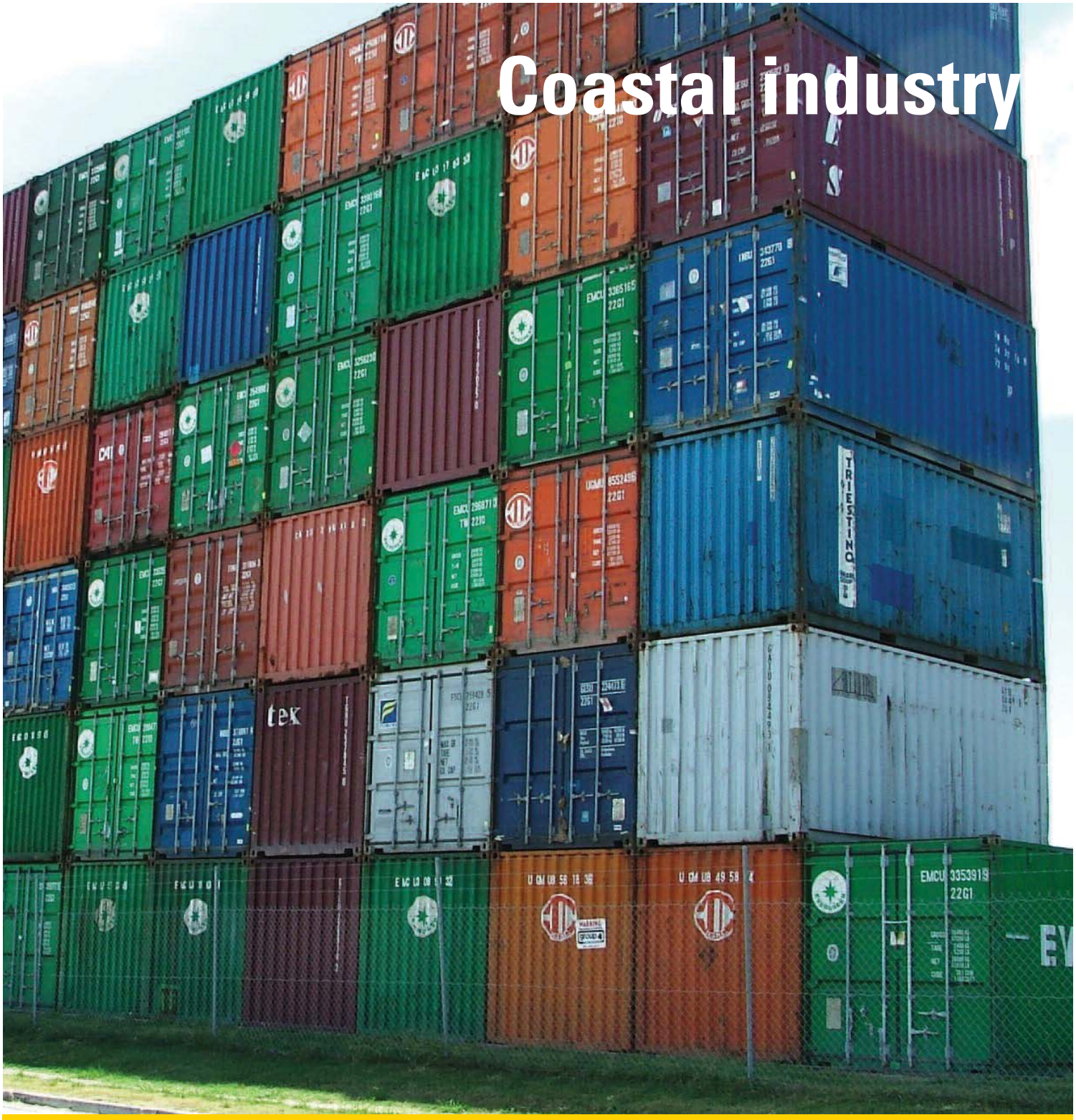
Winter 2008



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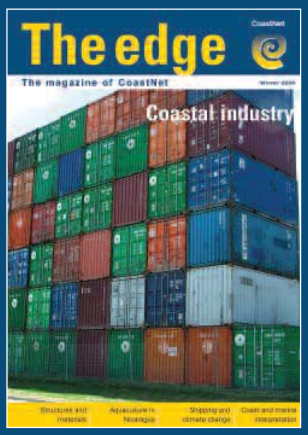

CoastNet – breathing new life into coastal matters

Winter 2008
Coastal Industry

The edge is a quarterly magazine, sent out to all CoastNet members.

CoastNet is an international networking organisation that works with all coastal interests to promote the exchange of ideas, information and expertise to find long term solutions to coastal problems that benefit all. Our mission is to safeguard the world's coast and those communities of people and wildlife that depend upon it for their future.

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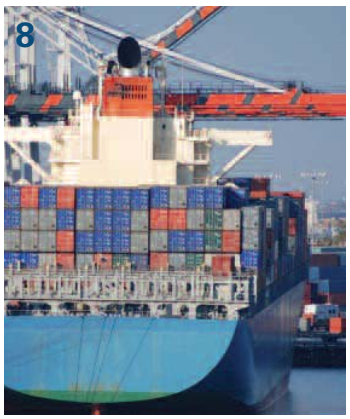

Shrimp farming in Nicaragua

Agnés Saborío Coze, Director of the Centre of Aquatic Ecosystems Research of the Central American University, takes a historical look at the development of a sustainable shrimp farming industry in Nicaragua.

1980s

In 1988, with support from the UN Food and Agricultural Organization, the first evaluative approach of adequate land for shrimp farming activity along the Pacific coast was implemented. The results indicated an area of approximately 39,250 hectares, of which 72 per cent (28,150 hectares) was concentrated in the Estero Real, close to the Gulf of Fonseca. The rest of the land was distributed close to the Esteros of Aserradores, Padre Ramos and Río Tamarindo (Tamarindo River) in the Pacific coast. These numbers were verified by a second study in 1992 and in 1994 with the support of Pradepesca, an EU project.

During the first half of the eighties there were a few isolated shrimp growing initiatives in salinas and enclosing systems that were abandoned because of political instability and technical problems. It wasn't until 1987 that some cooperatives managed to develop 100 hectares of rustic ponds. By 1990, these increased to an area of around 1,000 hectares, obtaining a yield of 250 pounds per hectare per year.

1990s

Since 1990, the thriving shrimp activity worldwide increased national and foreign investor interest in shrimp farming, with some investors applying for land concessions. At the begining of 1998 there were 8,299 hectares in production. However, in October, the tropical storm that hit Nicaragua as a result of Hurricane Mitch, reduced productive hectares by 25 per cent, equalling a loss of 2,108 hectares that year.

In 1999 shrimp farming, already reduced due to the previous years effects of Hurricane Mitch was further hit by an outbreak of white spot virus, harmless to humans but with devastaing effects on shrimp populations.

The noughties

By 2001, the industry increased yields through the use of new production systems, both technically and economically. At the beginning of the 1990s, semi-intensive culture increased the stocking rate between 8 and 10 post larvae per square metre, with a 10 per cent daily renewal of water. After the white spot virus outbreak, water stopped being pumped into the ponds and stocking rates increased.

Some farms have undertaken intensive culture with aeration / ventilation and a harvesting rate of 50 post larvae per square metre, obtaining good results. Some enterprises have also started using aerators and increased and improved water filtration. All these changes translate into larger and better productive results.

Trend moves towards larger producers

The shrimp industry has continued to grow since 2001 although there has been a decrease of small producers and a tendency to concentrate productive areas between few large producers. The

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997

1988 – Study looks at land suitability for shrimp farming on the Pacific Coast.

1990 – Potential of shrimp farming in Nicaragua attracts both national and foreign investment.

1998 – Hurricane Mitch hits Nicaragua devastating the fledgling shrimp industry losing 25 per cent of productive shrimp farming land.

1999 – Outbreaks o virus though Centra Nicaraguan shrimp reducing production

reasons for this are diverse: the disruption caused by Hurricane Mitch, the appearance of various diseases that required a certain degree of management and technical knowledge as well as the low market price of shrimp.

By 2006, 68 per cent of land was managed by businesses with 32 per cent still in cooperative hands. Production areas stood at:

- 52.5 per cent semi-intensive
- 27.1 per cent extensive
- 21 per cent artisanal.

Estero Real Management Plan

In 2006, the Estero Real Management Plan was approved by the Government of Nicaragua, declaring the area where 90 per cent of all shrimp farms are located a Protected Area and an International Ramsar Site. The plan outlines a commitment by the shrimp farming industry and the government to create a Good Practice Management Guide to regulate cultivation.

In 2007 the government, shrimp producers and the Central American University extended the proposal and the Technical, Social and Environmental Code of Responsible Conduct for shrimp farming in Nicaragua was approved. The code outlines good practices for each part of the shrimp production chain, considering food health, human rights, workers rights and environmental protection. Additionally it establishes the monthly monitoring of water quality of the entire Estero Real.

Shrimp production has been increasing anually, with the exception of 1998 due to the effects of Hurricane Mitch, from a production of 415,000 kilos in 1990 to 23,893,000 kilos in 2006.

Larger producers, however, now dominate. The shrimp cooperatives, for example, represented 100 per cent of production at the end of the 1990s, 33 per cent in 1995 but only four per cent by 2006.

Exports are the mainstay for the industry with USA receiving 42 per cent of production, the European Union (mostly to Spain, France, Germany and the UK), 54 per cent and four per cent to Central America.

Comparing shrimp culture with shrimp fishing in both oceans the results are very revealing. While shrimp farming has grown in the past few years by 144 per cent in volume and 89 per cent in value, shrimp fishing has decreased in the same period by 30 per cent in volume and in value. These numbers highlight the great value that aquaculture now has in Nicaragua, as an activity that generates food, employment and foreign currency if we develop it in harmony with people and the environment.

Agnés Saborío Coze is currently Director of the Centre of Aquatic Ecosystems Research of the Central American University.

The Latin American context

The cultivation of marine shrimp in the region dates back to the 1960s and is now cultivated in over 18 countries in and the Caribbean. A large percentage of shrimp farmed in Latin America is produced for export, primarily to American markets, but increasingly to Europe and Japan.

Initially shrimp farming affected mangrove areas in countries such as Colombia, Guatemala, Nicaragua and Ecuador but now some mangrove recovery has taken place due to better regulatory frameworks and incentives for restoration through replanting and maintenance measures.

There have also been efforts in the Central American countries to improve the management of fisheries and aquaculture according to specific regional objectives, principles and strategies which reinforce their integration policy.

In Brazil a Code of Conduct for Responsible Fishing and good practices for handling shrimp was introduced. Elsewere, initiatives include: good practices in aquaculture production in Colombia; qualification in good practices on handling and quality assurance of hydrobiological products in Costa Rica, and Environmental Regulation for Aquaculture (RAMA) in Chile.

Source: *Regional review on aquaculture development: Latin America and the Caribbean*, 2005. UNFAO.

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
of the white spot l America, affects industry, further .			**2001 –** New production techniques are introduced, such as improved water filtration and the use of aerators, improving shrimp harvest rates.					**2006 –** A shift towards large producers shifts percentage of land in cooperative hands to 32 per cent with 68 per cent of land managed by large enterprises. Government approves the Estero Real Management Plan, protecting the area where 90 per cent of all shrimp farms are located.	**2007 –** Technical, Social and Environmental Code of Responsible Conduct for Shrimp Farming in Nicaragua approved.